



LEADFREE
RoHS Compliant

MPR16, 14, 13, 12

Specifications Per

IEC 115-1 115-2

CECC 40101

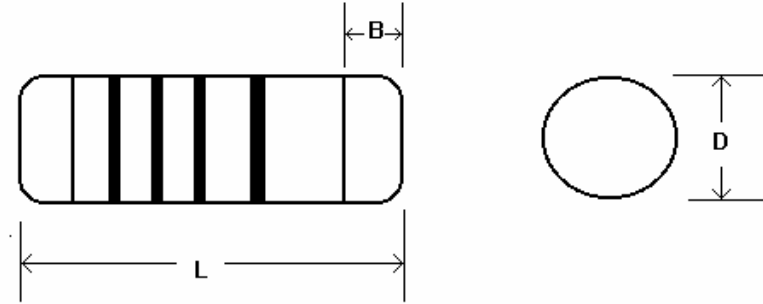
DIN 44061

Features

※ SMD enabled structure

※ Conformal Multi-layer Coating Against Humidity

※ Excellent Solderability Termination



Dimensions

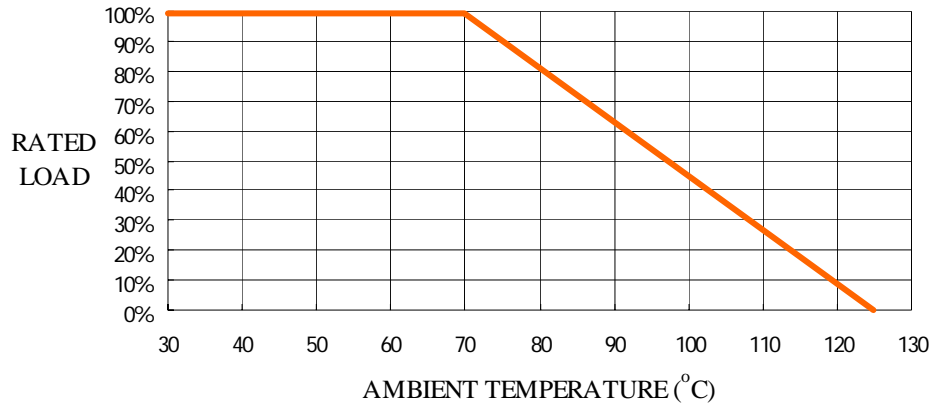
Type	Body Length (L)	Body Diameter (D)	Soldering spot (B)	Net Weight Per 1000 pcs
MPR16	3.45mm±0.1mm	1.35±0.1mm	0.6mm Min.	17 grams
MPR14	3.45mm±0.1mm	1.35±0.1mm	0.6mm Min.	17 grams
MPR13	5.9mm±0.2mm	2.2±0.1mm	1.0mm Min.	66 grams
MPR12	5.9mm±0.2mm	2.2±0.1mm	1.0mm Min.	66 grams

General Specifications

Type	Power Rating (at 70°C)	Max. Working Voltage	Max. Overload Voltage	Resistance Range Min.	Resistance Range Max.	Resistance Tolerance	Standard Resistance Value
MPR16	1/6W	200V	400V	10Ω	1MΩ	±0.5%	E-24/E-192
				22.1Ω	511KΩ	±0.25%	
				43.2Ω	499KΩ	±0.1%	
MPR14	1/4W	200V	400V	10Ω	1MΩ	±0.5%	E-24/E-192
				22.1Ω	511KΩ	±0.25%	
				43.2Ω	499KΩ	±0.1%	
MPR13	1/3W	300V	500V	10Ω	1MΩ	±0.5%	E-24/E-192
				15Ω	1MΩ	±0.25%	
				33.2Ω	511KΩ	±0.1%	
MPR12	1/2W	300V	500V	10Ω	1MΩ	±0.5%	E-24/E-192
				15Ω	1MΩ	±0.25%	
				33.2Ω	511KΩ	±0.1%	



POWER DERATING CURVE

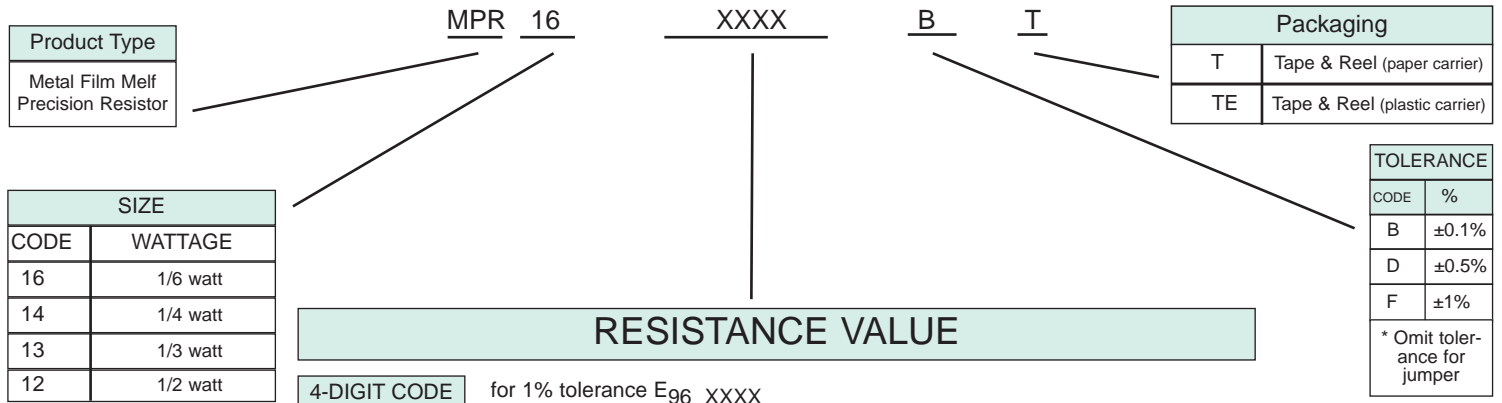


Performance Specifications

Characteristics	Limits	
Temperature Coefficient	±50, ±25, ±15, ±10 PPM /°C	
Film Temperature	MPR16, MPR14	MPR13, MPR12
	125°C	125°C
Short Time Overload	±(0.25%+0.05R)	
Dielectric Withstanding Voltage	MPR16, MPR14: 300VAC MPR13, MPR12: 500VAC	
Insulation Resistance	10 ⁴ MΩ	
Temperature Cycling	±(0.25%+0.05R)	
Humidity	±(0.5%+0.05R)	
Load Life In Humidity	±(0.5%+0.05R)	
Load Life 1,000 hours (at 70°C)	±(0.5%+0.05R)	
Resistance To Soldering Heat	±(0.25%+0.05R)	
Solderability	95% Min.	
Vibration	±(0.25%+0.1R)	
Terminal Strength	±(0.25%+0.05R)	
Thermal Shock	±(0.25%+0.05R)	

MPR16, 14, 13, 12

Part Numbering System



Product Type
Metal Film Melf Precision Resistor

SIZE	
CODE	WATTAGE
16	1/6 watt
14	1/4 watt
13	1/3 watt
12	1/2 watt

RESISTANCE VALUE

4-DIGIT CODE for 1% tolerance E₉₆ XXXX

CODE	3R01	10R0	1000	1001	1002	1003	1004	1332	3243	1214	5114
VALUES	3.01Ω	10Ω	100Ω	1KΩ	10KΩ	100KΩ	1MegΩ	13.3KΩ	324KΩ	1.21MegΩ	5.11MegΩ

Packaging	
T	Tape & Reel (paper carrier)
TE	Tape & Reel (plastic carrier)

TOLERANCE	
CODE	%
B	±0.1%
D	±0.5%
F	±1%
* Omit tolerance for jumper	

First three (3) digits are significant figures and fourth digit is number of zeros.
Letter "R" indicates decimal values under 100 ohms.